

REMARKS

Status of the Claims

Claims 1-32 were pending. Claims 17 and 19-23 have been canceled without prejudice or disclaimer. Claims 1, 10, 25 and 29 have been amended. New claims 33-38 have been added. No new matter has been added.

Claims Amendments

Claim 10 has been amended to correct a typographical error.

Claim 1 has been amended to recite “[a] method to predict athletic performance in an individual comprising: a) obtaining one or more samples from an individual; b) analyzing the sample for the presence of one or more genetic variations in the α -actinin-3 (ACTN3) gene; and c) predicting athletic performance based on the presence of the one or more genetic variations.” Support for these amendments can be found throughout the specification but at least at paragraphs [0027]-[0031], [0040], [0041], [0074] and [0096] of the published application and claims 1 and 25 as originally filed. These amendments were made without prejudice or disclaimer in effort to further prosecution. The Action asserts on page 2 that the groups “lack a corresponding technical feature” over North et al. (Nature Genetics (1999) volume 21, pages 353-354, hereinafter “North”) and that North “teaches mutations in ACTN3.” The Applicant respectfully disagrees that the instant claims lack a corresponding technical feature over North. North fails to disclose all the elements of the instant claims. For example, North fails to disclose analyzing the ACTN3 gene to predict athleticism, formulate training programs or select a sprint or endurance sport for an individual, elements of amended independent claim 1 and independent claims 25 and 29. North demonstrates the existence of mutations amongst the general population but does not disclose the use of identifying genetic variations and assessing athletic ability or maximizing ability in an individual based on the presence or absence of *any* of the disclosed genetic variations in the ACTN3 gene. The Applicant requests removal of the restriction based on North.

Claims 25 and 29 have been amended to depend from claim 1 and delete the repetitive phrase, "screening the individual for the presence of one or more genetic variations in the α -actinin-3 (ACTN3) gene." Support for these amendments can be found throughout the specification but at least at paragraphs [0115], [0116] and [0126] to [0128] of the published application and Example 3 and claims 25 and 29, as originally filed.

New claims 33 and 34 have been added. Support for these claims can be found throughout the specification but at least at paragraphs [0040], [0042]-[0049], [0076], [0096], [0114] and [0118] of the published application and Tables 1 and 3 and claims 4 and 15-17, as originally filed.

New claims 35-38 have been added. Support for these claims can be found throughout the specification but at least at paragraphs [0027], [0028], [0073]-[0076], [0082]-[0087], [0119], [0126] and [0128] of the published application and Example 3 and claims 7-11, as originally filed.

Restriction

The Action imposed a 3-way restriction requirement as follows: Group 1 (claims 1-24, drawn to methods of predicting athletic performance based on genetic variation in ACTN3); Group 2 (claims 25-28, drawn to drawn to methods of optimizing a training program based on genetic variation in ACTN3) and Group 3 (claims 29-32, drawn to methods of selecting a sport based on genetic variation in ACTN3). Although Applicant traverses the requirement, a provisional election is made to the claims of Group 1 (claims 1-24, drawn to methods of predicting athletic performance based on genetic variation in ACTN3). In addition, the Applicant requests that new claims 33-38 be included in Group 1.

In addition, the Action has further imposed a restriction to selecting a SNP from Table 3 and another gene from Table 4. The Action further asserts that this is not a species election but a restriction. The Applicant respectfully disagrees with these restrictions.

Traversal of Restriction

Applicant respectfully traverses the restriction requirement. The Action asserts that

searching all 3 groups would cause undue burden, yet the Action also asserts that “*all groups* lack a corresponding technical feature over the prior art.” The Action further asserts that North “teaches mutations in ACTN3.” It appears a search was already conducted that did not cause undue burden. Therefore, the Applicant respectfully submits that the burden to the Office will not be increased if the restrictions were not made. A search of the prior art with respect to one of the groups revealed potential prior art to other groups.

In addition, all of Groups 1-3 are directed to analysis of genetic variations in a *single* gene, ACTN3, and athletic assessment. Thus, all 3 groups share a “single general inventive concept.” To overcome the group restriction, claim 25, the independent claim of Group 2 and claim 29, the independent claim of Group 3 have been amended to depend from claim 1. The Applicant requests removal of the restriction and rejoinder of Groups 1-3.

The Action further asserts on page 2 that “each SNP and gene represents a distinct chemical composition, and thus are distinct inventions.” The Applicant respectfully disagrees with this restriction. In the interest of advancing prosecution, claims 17 and 19-23 have been canceled. All of the claims are now generic with respect to SNPs and a second gene. The Applicant submits that *all* of the genetic variations disclosed in the instant claims are directed to the ACTN3, therefore it is not necessary to elect one SNP from Table 3 or a second gene from Table 4. The invention as claimed relates to finding that mutations of the ACTN3 gene can influence athletic performance. Thus, performing methods encompassed by the instant claims by analyzing any SNP of the ACTN3 gene associated with this trait, whether listed in Table 3 or elsewhere, is covered by the same ‘special technical feature’ and is definitively an advantage over the referenced prior art, North.

With respect to the restriction regarding a second gene, the specification describes at least at paragraph [0029] of the published application, other genes “*may* also have beneficial effects” to analyze in conjunction with ACTN3 genetic analysis for athletic performance of a subject. Some of the potential genes are listed in Table 4 of the instant application. Therefore, the Applicant respectfully disagrees with electing a single SNP and a second gene.

If the restriction is insisted by the Patent Office, in the interest of advancing prosecution, the Applicant elects SNP: rs1815739 and Angiotensin I Converting Gene (ACE) listed in Tables 3 and 4 respectively.

CONCLUSION

For the reasons stated above, Applicant asserts that the restriction requirement is improper and requests withdrawal of the restriction requirement.

Respectfully submitted,

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